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CHRONIESE ETTERVORMENDE OSTEÏTIS

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Huidige verbeteringe in die behandeling van die akuut stadium; t.w. vroegtydige diagnose, die gebruik van lewevernietigende middels en onmiddellike bloedkultuur om die bakterieë se gevoeligheid vas te stel, die erkenning dat versterking van die algemene toestand bewerkstellig moet word voordat operasie gewaag word, en die beperking van enige operasie tot alleenlik die uitlating van etter, het daartoe bygedra om die sterftesyfers in die akuut stadium van 25% in 1940 tot 3% in 1949 te verminder. Vanselfsprekend is die tref van die daaropvolgende chroniese stadium ook verminder. Nogtans is daar groot getalle pasiënte met chroniese ettervormende osteitis wat die buitepasiënte-hospitaalafdelings besoek, wat die reserwe van arbeiders seer verminder, en wat veel gebreklikheid en lyding veroorsaak. Hierdie probleem raak nie alleen die individu aan nie, maar ook die landekonomie as geheel.

DIE PATOLOGIE

Daar is twee soorte wat onderskei moet word: *plaaslike chroniese ontsteking wat op party ope beenbreuke volg*, en die *chroniese osteïtis wat op die akute septikemiese stadium volg*. Eersgenoemde soort kom gewoonlik in die lang bene van volwassenes voor, die ontsteking is beperk tot die twee ente by die beenbreuk, daar is ischemie van die beenente wat tot nekrose kan lei, en beweegbaarheid van die breuk binne 'n ondoeltreffende spalk vererger die ontsteking. In die tweede soort is die hele lengte van die been dikwels ontsteek en wel in kinders, menigmaal is daar meer as een fokus, en die algemene toestand is ernstiger.

Waar kindjies aangetas word, ontwikkel die ontsteking sneller en kom sekwesters minder voor. Daar is verskillende redes hiervoor. Streptokokke is meer dikwels die teweegbrengende bakterieë in kindjies vergeleke met die ouer kinders. Die kindjie se been is sponsagtiger met periost wat losser aangeheg is; dus kan ruimte vir etter makliker gemaak word, die druk binne die been kan vroegtydig afgelos word, en sekwesters kan vermy word. Nog 'n rede is die spoediger en makliker beenvernuwing, asook die verwydering van dooie been in kindjies.

Waarom duur hierdie chroniese ontstekinge so lank? Been is heeltemal *strak*: derhalwe bly daar holtes in die digte been oor waar die besmetting die beenweefsel vernietig het. Hierdie *holtes* is van verskillende groottes. Hulle bevat granulasieweefsel wat aktief ontsteek is of wat net rustende kieme herberg. Daar kan ook een of meer sekwesters binne so 'n holte wees. Soms lewer kultuur van die holteweefsel geen bakterieë op nie. *Sekwesters* kan ook elders in dieselfde been teenwoordig wees; hulle ontstaan gewoonlik van die buitekantste gedeelte van die digte been. As die besmetting van naburige weefsels versprei is, dan is die sekwester net naasaan te vinde. In 'n septiese amputasie wat 'n sekwester vorm, is laasgenoemde 'n deel van die omtrek van die digte been wat aan die beenmurg grens.

Tydens die vernietiging van die digte been in septikemiese besmetting, word 'n *skede van verharde been* buitekant die vorige digte been gevorm. Deur venstertjies in die skede word etter of sekwestertjies uitgeskei via die sinus wat gewoonlik aanwesig is. Die skede kan dus maar swak wees, en in die vroeë stadium kan dit maklik breek. Die *sinus* kan ook sekundêre besmetting van buitekant na binnekant die been aanbring; daarbenewens is dit uitgevoer met besmette granulasieweefsel wat self herontsteking kan veroorsaak tensy die sinus wortel en tak verwyder is. Uiteindelik word dit geëpitiliseer en dan sal dit nooit genees nie. Weens die verharding in die digte been, is die *plaaslike bloedsomloop relatief verminder*. Toegang van liggaamsfagosiete en van lewevernietigende middels tot die besmette beendele word dus belemmer; boonop vergemaklik dit die verspreiding van die ontsteking binne die verharde been, veral as party van die bakterieë anerobies is. Die besmette beenholtes sal beslis nooit vanself genees nie, en hulle is 'n bron vir verspreiding na ander liggaamsgedeeltes (*piëmie*). Ook is dit moeilik om operatiewe hematome binne hierdie holtes te vermy; sulke hematome is broeiplekke vir bakterieë. Hierdie *aanhoudende bloedvergiftiging* bewerkstellig 'n bloedarmoede, 'n verlaging van die plasmaproteïene, en 'n verminderde weerstandsvermoë teen enige operasie. Die erg verdikte been veroorsaak natuurlik 'n mate van misvorming. *Verdere misvorming volg in kinders* weens die naburige epifiseë (q.v.).

Dan is daar die *Brodie-abses*. Dit kom gewoonlik in die sponsagtige gedeelte van die metafise voor; meer as 50% word in die skeenbeen aangetref. Kultuur van die etter

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lewer soms bakteriee op, meestal stafilokokke *aureus*. Sinus en sekwestertjies is seldsaam. Die gevaar van patologiese beenbreuk is maar gering in vergelyking met die ander tipes.

Garré-osteitis maak ongeveer 5% van alle gevalle van osteitis uit, waarvan die helfte in die skeenbeen is. Die middelgedeelte van die betrokke been word verdik deur beenvorming wat aan die binnekant en ook aan die buitekant van die digte been geskied. Hierdie letsel is baie chronies. In sommige gevalle sal 'n noukeurige biopsie beenagtige osteoom aanwys.

Die veroorsakende bakteriee in die septikemiese besmetting is gewoonlik hemolitiese stafilokokke en streptokokke; in die ope beenbreuke is daar altyd 'n groot verskeidenheid van organismes, t.w. stafilokokke, streptokokke, anerobiese kokke, *B. coli*, ens. Sekundêre besmetting met *B. proteus* en *B. pyocyaneus* gebeur as daar 'n sinus is; hulle vertraag genesing van die beenletsel en hulle is gevaarlik weens hul weerstandigheid teen al die lewevernietigende- en die ontsmettings-middels.

KLINIESE TOESTAND

Dis dié van 'n voortdurende beenontsteking omrede die verharde digte been, die weerstandige bakteriee, die verswakte gesondheidstoestand, en soms die onvolkome verwydering van besmette weefsels by vorige operasies.

Soms is daar net gevoeligheid en plaaslike warmte in 'n deel van die been. In ander gevalle is die hele been verdik en uiters pynlik, met meer as een sinus wat etter òf aanhoudend òf met tussenposes afskei; die etter lei tot huidontsteking tensy die omgewing van die sinus behoorlik met vaselien beskerm word.

Veral in die Brodie-abses gebeur daardie nagtelike deurborende pyn, asook plaaslike warmte, in 'n been wat in alle ander opsigte normaal is. Garré-osteitis is tipies chronies, dis die middelgedeelte van die been wat verdik word, daar is geen etter nie en geen verhoging van die plaaslike temperatuur nie.

DIE RÖNTGENONDERSOEK

Dit skaf fotos aan wat net so veranderlik as die kliniese tekens is. Enersyds is daar vernietiging van been, wat aktiwiteit aandui; andersyds is daar die beenvernuwing wat daarmee gepaard gaan. Beenverharding dui gedeeltelike of volkome genesing aan, en is veral opmerkbaar in die gevalle wat seer chronies is. Sekwesters kan klein wees, en word bewys deur hul ondeurstraalbaarheid vergeleke met normale been; weens hul afsluiting van die bloedsomloop verloor hulle geen kalsium as gevolg van die ontsteking en die immobilisering nie, iets wat wel in die normale been gebeur.

Patologiese beenbreuk moet altyd in die oog gehou word en die beensterkte as sodanig geskat word. Uitbreiding van beenontsteking word aangedui deur die toename in grootte van die areas van verdunning, en terselfdertyd is daar vermeerderde periostale reaksie, met of sonder die vorming van nog meer sekwestertjies. Die röntgenfotos is van nut as hulle met dié van maande tevore vergelyk word. Spesiale fotos is soms nodig, bv. stereoskopiese skiagramme en skuinsuitsigte, asook fotos geneem nadat enige sinus met lipiodol ingespuit is. In die Brodie-abses is daar 'n klein area van verdunning omsingel deur verharde been, en wel in die sponsagtige gedeelte van die metafise gewoonlik.

ONDERSKEIDENDE DIAGNOSE

Dit kan moeilik wees, veral waar lewevernietegende middels al vantevore gebruik was. Terloops word beklemtoon hoe belangrik dit is om eers die diagnose vas te stel voordat hierdie middels gebruik word, tensy daar lewensgevaar bestaan.

Sifilis doen enigiets na, en moet in *alle* beenletsels uitgeskakel word. Patologiese beenbreuk kan in die gomgeswelle voorkom. Die Kahn en Eagle toetse, en veral die terapeutiese toets, gee die regte leiding. Veiligheidshalwe moet in die oog gehou word dat 'n positiewe bloedtoets *nie* ander beenletsels uitskakel nie.

Framboesie kan ook enige beenletsel simuleer, maar sy ontwikkeling in die been is gewoonlik akuter as dié van sifilis. Die beenvernietiging kan binne 'n paar weke al ver vorder vergeleke met die stadiger verspreiding van beensifilis. Ook in framboesie is dit die terapeutiese toets wat die uitslag gee; die kliniese toestand en die röntgenfotos dui dan verbetering binne 'n paar weke aan.

Beentuberkulose begin gewoonlik in die epifise, selde in die metafise. Oor die algemeen is daar ook besmetting van die naburige gewrig. Röntgenondersoek wys net osteoporose aan. Maar as 'n sinus teenwoordig is, dan veroorsaak die onvermydelike sekundêre besmetting ook periostale reaksie; in sulke gevalle sal ondersoek van die sinus gewoonlik tuberkulose bewys. 'n Negatiewe Mantoux-toets dui 'n ander letsel aan. *Biopsie* is deurgaans nodig om die diagnose vas te stel, d.w.s. histopatologie van die beenletsel en streeklimfkliere, weefselkultuur om die juiste basille te verkry (uitslag oor ses weke), en inenting van marmotjies met die letselweefsel (uitslag oor drie maande).

Beensarkoom, veral die verhardende soort, is al dikwels vir akute en chroniese osteitis aangesien; en omgekeerd. Beensarkoom begin gewoonlik in die metafise; in 80% is dit naby die knie, en in sowat 20% is daar 'n verhoging van die liggaamstemperatuur tot 101° F met 'n leukositose tot by die 18,000 per k.cm. Die röntgenfotos is onderskeidend as die sonstraalbeeld wel teenwoordig is, maar in baie gevalle gee hulle nie die diagnose nie. Die tipiese periostale driehoek van Codman is al soms op röntgenfotos van chroniese osteitis gesien. Die geringste moontlikheid dat die letsel beensarkoom kan wees, vereis 'n vroegtydige en deeglike biopsie met daaropvolgende ondersoek van die weefsels deur 'n ervare patoloog. Waar die letsel wel sifilis kan wees, moet 'n terapeutiese toets enige biopsie voorafgaan. Die aanwesigheid van heelwat etter is gewoonlik genoegsame bewys dat die letsel nie sarkoom is nie; dog neoplasmas kan ook besmet word, en dus is dit 'n gulde reël om in elk geval voort te gaan met deeglike histopatologiese asook bakteriologiese ondersoek van die beenweefsel. Die verklaring van röntgenfotos en van die biopsie in 'n geval van beensarkoom is soms uiters moeilik, en altyd moet die kliniese toestand ook in aanmerking geneem word.

Beenagtige osteoom is al menigmaal vir Garré-osteitis aangesien, of vir 'n fokus van gewone chroniese osteitis. Vergeleke met laasgenoemde twee, is die geswel nie warm nie en beide die liggaamstemperatuur en die telling van wit bloedliggaampies is normaal sonder om daartoe vermom

te word deur die gebruik van lewevernietegende middels. Die gevoeligheid van die been is akuut en wel beperk tot 'n klein gedeeltetjie. Die röntgenfotos wys 'n klein fokus in die digte been aan; dis 'n ronde of ovale area van osteoporose wat 'n dig sentrum het en wat deur verharde been omsingel word. Dis maar selde dat dit in die sponsagtige been aangetref word. Etter is nie te vinde nie, en kultuur van die letsel is gewoonlik negatief. Histopatologiese ondersoek stel 'n kenmerkende beeld van beenagtige weefsel voor, en algehele verwydering van die fokus verskaf altyd onmiddellike en volkome simptoomverligting.

Plaaslike spierverbening kan verwarring veroorsaak as daar 'n koors sonder enige geskiedenis van 'n vorige besering is.

Ewing-beenendotelioom kom in die middelgedeelte van 'n lang been voor, gewoonlik in diegene wat jonger as 21 jaar is. Röntgenfotos gee 'n kenmerkende beeld van periostale reaksie, wat in laes langsaan die lengte van die been en wel buitekant die periost neergelê word. Dis ook kenmerkend dat diep röntgenbestraling spoedige verbetering aanbring, wat tydelik is.

Fibrosarkoom kan verdikking van periost veroorsaak, maar alleenlik as die neoplasma alreeds baie groot is. Die groot geswel, die geringe verandering in die periost op die röntgenfotos aangewys, en die biopsie, bevestig die diagnose.

Tifoïed en paratifoïed word selde deur osteïtis opgevolg; in eersgenoemde is die voorkomssyfer maar net 1%, en in laasgenoemde is dit nog minder. Die tydperk na die ontstaan van die bloedbesmetting kan so lank as 10 jaar wees. Die been wys verrotting liewers as nekrose aan, en derhalwe is sekwesters uiters seldsaam. Veral in die ruggraat, waar dit die lumbale gedeelte gewoonlik aantas, moet dit van tuberkulose onderskei word. Die Widal-agglutinasietoets gee die uitslag.

Brusellose doen osteïtis na omrede die periostale verdikking wat in albei aanwesig is, dog etter en abses is seldsaam in brusellose (12% van gevalle). In die skelet kom dit gewoonlik sowat drie maande na die primêre bloedbesmetting voor. Vir die diagnose moet die agglutinasietoets in 'n hoë titer, en veral die bloedkultuur, positief wees; laasgenoemde is die sterkste bewys van 'n aktiewe brusellose letsel.

Koksidiose en blastomikose bereik die been via besmette bloed. Daar is net beennekrose, en meer as een sinus. Histopatologiese en bakteriologiese ondersoek van die uitvloeisel en weefsels stel die diagnose vas.

KOMPLIKASIES

Verspreiding van die besmetting. Òf besering òf operasie kan rustende kieme aktiveer. Sodoende kan dit algemeen versprei na gewrigte en ander bene, of na inwendige organe. Sommige gewrigte is geneig om deur plaaslike verspreiding besmet te word, bv. die heup en skouer en knie gewrigte, waar die epifiseë binnegewrigs is. Toksiene binne gewrigte word spoedig deur die bloedsomloop opgeneem, derhalwe is gewrigsontsteking altyd 'n gevaarlike komplikasie. Gewrigte moet te alle tye gereeld ondersoek word sodat behandeling, indien nodig, vroegtydig kan begin aangesien binnegewrigs-penicillin sulke gewrigte al volkome herstel het. Etter moet opgesuig word voordat die gewrigskraakbeen onherstelbaar beskadig is, anders is 'n ankilose onvermydelik. Ook epifiseë kan vernietig word, wat dan misvorming veroorsaak. Patologiese ontwrigting kan gebeur tensy die gewrig in 'n regte posisie gespalk bly. Dis nogal interessant dat osteïtis 'n gewrig kan besmet, dog verspreiding in die teenoorgestelde rigting gebeur maar selde.

Sekundêre besmetting gebeur al te dikwels in hospitale waar septiese gevalle nie in aparte sale geplaas word nie, en orals waar aseptiese metodes nie ten strengste toegepas word nie. Gipsspalke verseker dus ook dat nuuskierigheid nie toegelaat sal word om die ontsteking te vererger nie. Een van die oorsake van mislukte behandeling, is die ontstaan van kieme wat weerstandig is teen lewevernietigende- en ontsmettings-middels; en sekundêre besmetting is altyd die oorsaak van weerstandige *B. proteus* en *B. pyocyaneus* in die letsel, en soms ook van weerstandige stafilokokke en streptokokke. In elk geval is dit raadsaam om altyd *twee* lewevernietegende middels te gebruik (teen gramnegatiewe sowel as teen grampositiewe bakterieë), sodat ontwikkeling van *penicillinase* vermy word; die beste kombinasie is Penicillin en Aureomycin.

Die naburige epifiseë in kinders word altyd deur die ontsteking beinvloed. Hoe jonger die kind des te groter kan die misvorming word. Waar besmetting die epifise binnedring, volg daar vernietiging van die epifise en verkorting van die betrokke been; waar daar twee ewewydige bene is, kan dit ontwrigting tussen die twee bene veroorsaak. Die ontsteking wat tot die metafise beperk bly, kan die epifisiele ontwikkeling òf stimuleer òf vertraag; as daar net een helfte van die epifise so aangetas word, dan volg gewrigsmisvorming, bv. as die buitekantse helfte van die bo-ent van die skeenbeen so geprikkel word, dan volg daar bakbene. Met betrekking tot die hoeveelheid ontwikkeling in die lengte, waarvoor die verskeie epifiseë verantwoordelik is, bly Digby se gegewens nog taamlik akkuraat:

Been	*Proksimale epifise*	*Perifere epifise*
Dybeen	31%	69%
Skeenbeen	57%	43%
Skuitbeen	60%	40%
Sleutelbeen	62%	38%
Bo-armbeen	81%	19%
Speekbeen	25%	75%
Elmboogbeen	19%	81%

Gewoonlik word die epifiseë se ontwikkeling gestimuleer en nie vertraag nie, deur die naburige ontsteking.

Ook is dit nou vasgestel dat as ledemate aanhoudend gedurende hul ontwikkelingsperiode gespalk word, dan sal hulle verkort afgesien van enige plaaslike patologie. Dit is te wyte aan *atrofie* van die bene, en dus ook atrofie van die epifiseë wat derhalwe op 'n vroeëre stadium verkalk en dan ophou met groei.

Nie-aansluiting van 'n ope beenbreuk gebeur dikwels as daar 'n plaaslike osteïtis bestaan. *Ontsteking veroorsaak hiperemie*, en hiperemie in 'n beenbreuk veroorsaak altyd vertraagde aansluiting. Tensy spalking onafgebroke bly, sal die vertraagde aansluiting deur nie-aansluiting verplaas word.

Nog 'n oorsaak van nie-aansluiting is die *verwydering van te veel been*, òf tydens die eerste noodoperasie òf by 'n latere sekwesterektomie. Die periost moet nooit buitensporig afgestrook word nie. Alleenlik heeltemal los of

klaarblyklik besmette been moet verwyder word; in alle gevalle moet spalking deeglik wees, en ook so bly.

Patologiese beenbreuk gebeur as die spalking van 'n geval van aktiewe chroniese osteitis ondoeltreffend of onderbroke is. Dit vererger altyd die ontsteking, en word menigmaal gevolg deur nie-aansluiting. Sowat 30% van alle patologiese beenbreuke word deur chroniese osteitis veroorsaak, en patologiese beenbreuk kom in omtrent 2% van chroniese osteitis van die lang bene voor. Die ernstigste plek is in die dybeen. In alle gevalle gebeur 'n herbreuk baie maklik.

Die vernaamste oorsake van patologiese beenbreuk in chroniese osteitis is: (a) vertraagde diagnose van 'n subakuut ontsteking van die onderste ledemaat, met versuim om deeglike spalking vroegtydig toe te pas.

(b) Ondoeltreffende spalking in die gewigsdraende ledemate, veral waar daar net een been in daardie gedeelte is.

(c) Buitensporige verwydering van die nuwe beenskede tydens sekwesterektomie.

(d) Geweldige beenatrofie wat veroorsaak word deur langdurige immobilisering.

(e) Onverskillige uittrek van sekwesters sodat die been beseer word.

(f) Die onverskillige optel van verswakte ledemate wanneer hulle tydelik buite spalking is, soos by die afneming van röntgenfotos.

Karsinoom kan in 'n sinus of in 'n beenholte ontwikkel, as hulle met huid uitgevoer is. In sulke gevalle is die been uiters verhard, die weefsels ongeskik vir 'n herstellende operasie, en die algemene toestand sleg. Vir baie van hulle is amputasie in elk geval die beste uitweg, al is daar nog geen karsinoom nie.

Amiloïedontaarding is nou 'n seldsame verskynsel weens die byderhand doeltreffende middels. Tog is dit 'n moontlike komplikasie in chroniese osteitis van die benige bekken met meer as een uitskeidende sinus.

Verwarring van die diagnose kom in osteitis van die ruggraat of die bekken voor, in die wese van 'n misleidende buigingsmisvorming van die heupgewrig, wat veroorsaak word deur etter wat die lendespier se skede prikkel.

Spieratrofie en verstyfde gewrigte volg in alle pasiënte wat oor 'n lang tydperk gespalk bly; so word die ongeskiktheidperiode nog meer verleng.

(*Word vervolg*)

NEW PREPARATIONS AND APPLIANCES

'PROKETUSS'
ANTIHISTAMINIC, ANTI-ALLERGIC SYRUP

Sharp & Dohme introduce 'Proketuss' for the symptomatic treatment and control of the allergic cough. Its formula represents a combination of antihistaminic, broncho-dilating and expectorant properties. Each 5 c.c. dose contains:

Methapyrilene hydrochloride	10 mg.
'Propadrine' (Phenylpropanolamine hydrochloride)	15 mg.
Potassium citrate	150 mg.
Chloroform	15 mg.
Menthol	1 mg.
Alcohol	5%

The antihistaminic and anti-anaphylactic activity, as well as pharmacologic properties of methapyrilene hydrochloride have been amply demonstrated. Clinical evaluation of this compound has shown that many allergic manifestations, in which the release of histamine or histamine-like substances is suspected, respond to the oral administration of methapyrilene. These include hay fever, perennial allergic rhinitis, urticaria and angioneurotic edema, pruritus, serum sickness, atopic and contact dermatitis, eczema, dermographia, allergic headache, preasthmatic spasmodic cough and asthma.

The bronchodilating action of 'Propadrine' is effective for the control of asthma and other conditions in which bronchial spasm occurs. It relaxes the smooth muscles of the bronchi and relieves the spasm that is a large factor in the cough and respiratory discomfort accompanying allergic asthma.

'Proketuss' is reinforced with potassium citrate as a saline stimulant that increases the secretion of the mucous glands, indirectly exercising a sedative effect on inflamed mucous membranes.

Since there is considerable variation in the severity of symptoms and in the response of individual patients, the dosage must be adjusted to meet the requirements of each case. In general, the following dosage schedule is recommended:

Adults: 10 c.c. (2 teaspoonfuls) or more from 1 to 4 times daily. (If symptoms are severe, the initial dosage may be increased to 20 c.c. 3 or 4 times a day. A maintenance dosage of 5 c.c. to 10 c.c. from 1 to 4 times daily is suggested after symptomatic relief has been obtained.) *Children*: 5 c.c. (1 teaspoonful) or more from 1 to 4 times daily.

'Proketuss' is supplied in 4-oz. bottles.

ABSTRACT

R. H. Black, *Observations on the Treatment of Falciparum Malaria*. Transact. R. Soc. Tropical Medicine and Hygiene (1949): **42**, pp. 565-568.

'The introduction of modern anti-malarial drugs such as paludrine and chloroquine had tended to divert attention from quinine and its activity against *plasmodium*.'

With these words, Black opens his communication, with a purpose to outline a rational view of specific treatment of falciparum infections.

He demonstrated (1946) that cultures of *Pl. falciparum* are not influenced by chlorguanide until they reach the early schizont stage. Then development stops and the parasite degenerate. In cerebral malaria the parasites anchored within the cerebral capillaries are in the later stages of development. As chlorguanide exerts its action upon trophozoites only at the stage of earliest chromatin division, much time will necessarily be lost if chlorguanide is the only drug used. The value of quinine in the treatment of severe falciparum infections should be re-emphasized.

For the usual cases of heavy falciparum infection and cerebral malaria the intravenous injection of quinine, followed by oral chlorguanide is the correct treatment. The value of quinine is demonstrated by an experience at the Cairns (Australia) Medical Research Unit of which the staff volunteered for some final experiments with chlorguanide and falciparum malaria after the recent war had ended. One of the professional staff developed malaria and was treated with oral quinine for two days, followed by chlorguanide. The response to treatment was good.

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VAN DIE REDAKSIE

DIE VERWYDERING VAN RADIO-AKTIEWE AFVAL

Die feit dat radio-aktiewe jodium onlangs vir die eerste keer by die behandeling van skildkliersiektes in Suid-Afrika gebruik is, sal ernstige probleme skep in verband met die verwydering van afvalprodukte soos urine waarin die radio-aktiewe jodium ontlas word. Aandag is reeds op hierdie probleem gevestig[1] na die publikasie van die belangrike verhandeling deur Weinbren.[2]

Die probleem is natuurlik van die grootste belang in die Verenigde State waar die atoomkraginstallasies ontsaglike hoeveelhede afvalprodukte lewer en die grootste sorg uitgeoefen moet word by die verwydering van radio-aktiewe afval wat baie jare lank gevaarlike strale kan afgee.

Volgens dr. C. C. Ruchoft, Mediese Adviseur van die Atoomkragkommissie van die Verenigde State, is hierdie afval tot op hede veilig verwyder. ‚Tot dusver het nie een lewe verlore gegaan nie of is selfs 'n mens of dier beseer nie.'

'n Voorbeeld van wetenskaplike verwydering is die metode wat deur die *General Electric*-maatskappy by sy *Knolls Atomic Power Laboratory* naby Schenectady in die staat New York gebruik word. Die laboratorium se verwyderingseenheid kan meer as 2,250,000 gelling radio-aktiewe afval per jaar hanteer.

Afvalmateriaal uit alle dele van die laboratorium word in tenks van vlekvrye staal met 'n inhoudsmaat van 10,000 gelling elk versamel. Die inhoud word in 'n verdamptoestel gelei wat in werklikheid 'n yslike stookketel is. Die water in die afval word dan verdamp en in tenks van 5,000 gelling gekondenseer.

Monsters word getoets en indien die hoeveelheid radio-aktiwiteit wat aanwesig is klein genoeg is om onskadelik te wees, word dit in die naaste rivier uitgelaat. Indien dit nie die geval is nie, word dit weer deur die verdamptoestel gestuur en gedistilleer. Sulke water is werklik suiwer genoeg om weer in die laboratorium gebruik te word, maar dit word nie gedoen nie.

Opgeloste en gesuspendeerde materiaal konsentreer op die boom van die verdamptoestel as 'n dik modder. Wanneer dit deur pype na 'n vakuumdroogoond gepomp is, word dit oor 'n verhitte staalsilinder gesprei. Die gedroogde afval word afgeskraap en val onder in 'n kamer wat deur betonmure beskut word.

Met masjinerie wat op 'n afstand bedien word, word kanne van vlekvrye staal in hulle plek gelig om die vaste afval bymekaar te maak. Aangesien dit nie op die oomblik doenlik is om enige nuttige radio-aktiewe elemente wat oorbly te skei nie, word die kanne geberg. Hulle mag uiteindelik in betonblokke geplaas en in die see gegooi word.

1. Inleidingsartikel (1950): Hierdie *Tydskrif*, **24**, 1037.
2. Weinbren, M. (1950): S. Af. J. Clin. Sci., **1**, 213.

EDITORIAL

DISPOSAL OF RADIO-ACTIVE WASTES

The recent introduction of the use of radio-active iodine in the treatment of thyroid diseases in South Africa will create serious problems in connexion with the disposal of waste products such as urine in which the radio-active iodine is excreted. Attention has already been drawn to this problem[1] following on the publication of the important paper by Weinbren.[2]

The problem, of course, is one of vast importance in the United States where the atomic energy plants produce enormous quantities of waste products and great care must be used in the disposal of radio-active wastes which may give off dangerous radiations for many years.

According to Dr. C. C. Ruchoft, Medical Consultant to the U.S. Atomic Energy Commission, these wastes to date have been disposed of safely. 'Until this moment there has not been the loss of a single life, or even injury to man or animal.'

An example of scientific disposal is the method used by the General Electric Company at its Knolls Atomic Power Laboratory near Schenectady, in the State of New York. The laboratory's disposal unit can handle more than 2,250,000 gallons of radio-active wastes a year.

Waste materials from all parts of the laboratory are collected in stainless steel tanks with a capacity of 10,000 gallons each. The contents are fed into an evaporator, which is actually a huge still. The water in the waste is then vaporized and condensed into 5,000-gallon tanks.

Samples are tested and, if the amount of radio-activity present is small enough to be harmless, the water is discharged into a nearby river. If not, it is passed through the evaporator and distilled again. Such water is really pure enough for re-use in the laboratory, although this is not now being done.

Dissolved or suspended material concentrates at the bottom of the evaporator as a thick mud. Pumped through pipes to a vacuum dryer, it is spread on a heated steel drum. The dried waste is scraped off and falls into a room below, which is shielded by concrete walls. By remote control, stainless steel cans are lifted into place to collect the solid wastes. Since it is not practicable now to separate any useful radio-active elements that remain, the cans are stored. They may eventually be imbedded in concrete blocks and dumped at sea.

1. Editorial (1950): This *Journal* **24**, 1037.
2. Weinbren, M. (1950): S. Af. J. Clin. Sci., **1**, 213.

NASAL RHINOSPORIDIOSIS

REPORT OF A CASE IN NATAL

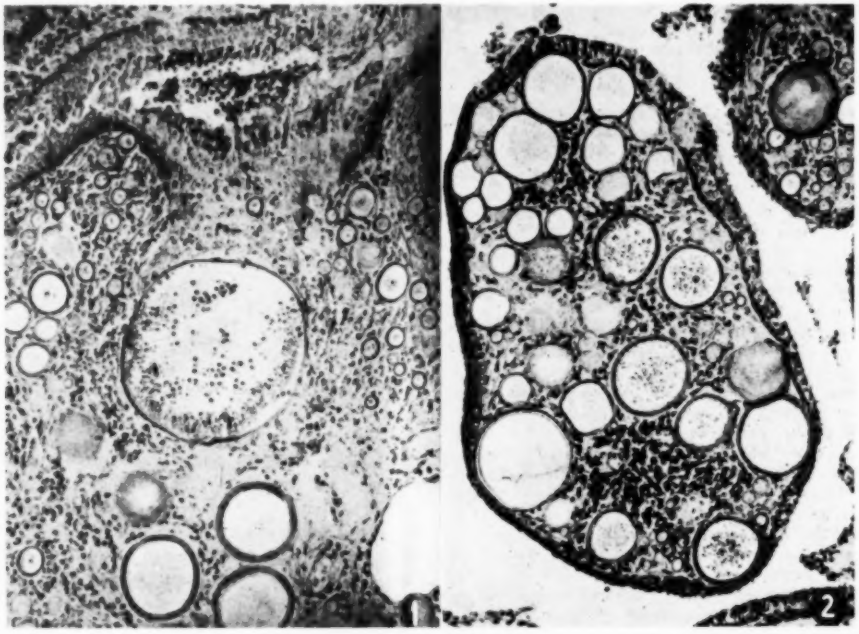
A. M. DICK, *C.B.E.*, M.B., F.R.C.S.
Ladysmith, Natal

Infection by *Rhinosporidium seeberi* can occur in the nose and in the conjunctival sac. The method of infection is not known. It is believed that horses, mules, cows and bullocks are subject to nasal rhinosporidiosis and the spores are carried in dried dung. It may also be water-borne.

A nasal case has been recognized in Ladysmith. Daniel Sitole, aged 12, from Driefontein, was admitted on 2 April with a blocked nose on the left side. A polypus was visible, apparently coming from the middle turbinate.

At operation under local anaesthesia (cocaine and adrenalin) it was found that the polypus arose from the septum and not from the middle turbinate. It had a thin pedicle and the surface showed fine whitish spots (the sporangia) suggesting rhinosporidiosis—a condition with which I was familiar in India.

The polypus was removed by the snare and the base of the pedicle with the mucosa around was cauterized by the electric cautery. The whole polypus was sent to Durban for examination and proved to be a Rhinosporidium infection. No other lesion was found in the nose. He has lived all his life in Driefontein and has three sisters older than himself, all healthy.



When seen on 3 July the nose had healed perfectly and there was no sign of any other growth.

In the conjunctival sac rhinosporidiosis appears as a movable, folded polypoid growth with a pedicle rising usually from the mucosa of the fornix. In the nose it may appear as a single tumour with a pedicle, as sessile multiple tumours or as a combination of both.

Its colour is reddish purple, studded with minute whitish dots—the sporangia.

Single tumours are round or oval lobulated growths. The mass of the tumour is composed of numerous lobes or fronds, free distally but closely bunched together and

appearing solid until teased out. The site of origin may be the septum, outer wall or floor of the nose.

Ordinary nasal polypi only arise from the middle turbinate. A polypus located elsewhere than the middle turbinate should be regarded with suspicion and sent for section. No medical treatment has any effect. Careful excision of the infected tissue is required.

Microscopically the characteristic feature is the presence of Sporangia, some filled with endospores.

Dr. Thomas from the Central Pathological Laboratory, Durban, who examined the specimen has been good enough to prepare two photomicrographs of the polypus, showing various immature sporangia and a mature one full of endospores (Figs. 1 and 2).

I am very much obliged to him for the interest he has taken in this case.

An excellent account of this infection is given in the *Journal of Laryngology*, **38**, 1923, No. 6, page 285, by Ashworth and Logan Turner.

SUMMARY

A case of nasal rhinosporidiosis is reported from Natal.

HERPES ZOSTER OF THE LOWER EXTREMITY

A. SHEDROW, M.D., M.R.C.S., L.R.C.P.
Johannesburg

Herpes Zoster is a common disease. It was known to ancient clinicians who gave it the appropriate name, meaning a lesion which 'creeps in a girdle'. Apparently those early observers most commonly identified cases of zoster affecting the thorax and missed or did not encounter other localizations of the disease.

Herpes zoster of the lower extremities is less common and according to statistical data accounts for 9% of all cases, while zoster affecting the sacral ganglia accounts for 2%. The following three cases of zoster of the lower extremity show some interesting features and raise some points for discussion.

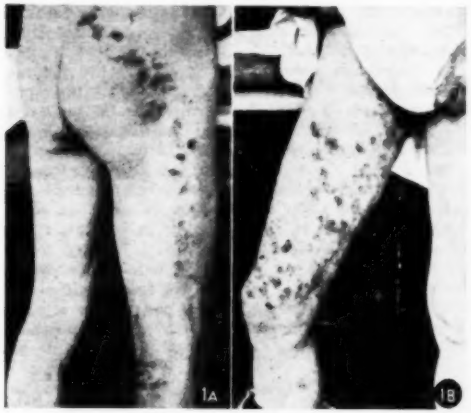


Fig. 1 (a) and (b). Case 1. Extensive eruptions in the distribution of the second and third lumbar sensory roots.

Case 1. A male, 59 years old, complained of pain in the legs, accompanied by a burning sensation. When he was first seen, no cutaneous lesions were observed and a provisional diagnosis of fibrositis was made. A few days later, a number of erythematous patches appeared on the back and on the thigh with superimposed vesicles on them. Herpes zoster was then diagnosed. The patient was told to expect more skin eruptions and intensification of his pain. Some days later the eruption was quite intense and distributed over a large area (*Figs. 1 a and b*). The patient received conservative treatment and 10 days after the onset of the illness made an uneventful recovery.

The intensity of the skin lesions does not necessarily indicate an intensified inflammation of the affected ganglia.

Case 2. A female patient aged 32 years experienced pain and a burning sensation in the left thigh and leg and pruritus in the region of the external genitalia. At the first examination no skin eruptions were seen and a provisional diagnosis of muscular rheumatism was made. Two days later the pain became intensified and a number of erythematous patches appeared along the thigh, the leg and the external genital region involving the left labium majus. Herpes zoster was then diagnosed. After 12 days all symptoms subsided without any post-herpetic sequelae. This case is interesting because, in addition to the involvement of the lower lumbar ganglia, the sacral segments were also involved, as manifested by skin eruptions in the external genital area, affecting the left labium majus. Compared with the previous case, the distribution is identical as far as the lumbar ganglia are concerned, yet the intensity of the skin lesions is less marked (*Figs. 2 a, b and c*).

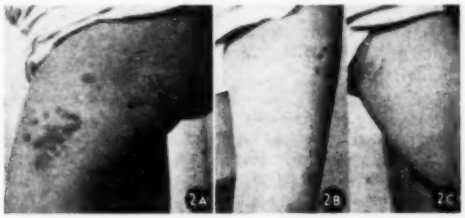


Fig. 2. Case 2. Patchy eruption in the segmental distribution of the lumbar sensory roots (L 1, 2 and 3).

Case 3. A woman, aged 49, complained of pain in the

left leg with slight dysaesthesia. The patient did not have any skin eruptions, and a provisional diagnosis of muscular rheumatism was made. Two days later, when I saw the patient again, a solitary erythematous patch with superimposed vesicles had appeared on the leg. Herpes zoster was diagnosed and the patient was told to expect more skin eruptions and intensification of the pain. Within one week an extensive eruption appeared, involving the lower lumbar ganglia. Here too, the intensity of the eruptions was not great (*Fig. 3*). On the ninth day an eruption appeared over the face, chest, trunk and upper extremities.

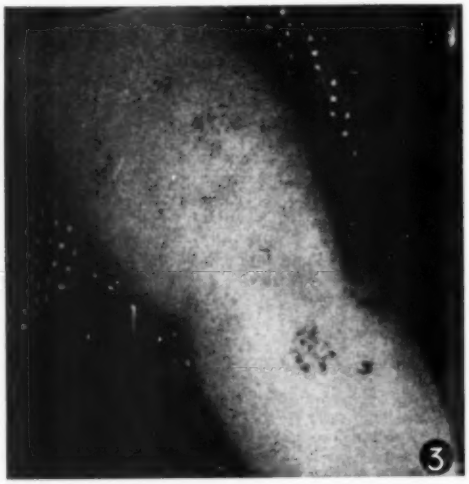


Fig. 3. Case 3. The eruption below the knee has become haemorrhagic, while the lesions on the thigh are fading.

The patient was pyrexial. The appearance of the lesions strongly suggested varicella.

The patient continued to complain of general malaise, she felt depressed and languid, and the pain in the leg persisted. The skin lesions, although not so widely distributed as in the first case and less intense in appearance than in both previous cases, nevertheless acquired a haemorrhagic aspect, indicating the severity of the ganglion inflammation. An exuberance of zosterian vesicles is not necessarily a criterion of the intensity of the condition, and a mild cutaneous eruption does not exclude a serious inflammatory involvement of the sensory ganglia. As the conservative treatment failed in this case, and in view of the protracted course of the illness, Aureomycin was administered to the patient with very good results. Ten days afterwards all the eruptions receded and the pain disappeared.

This case exhibits some salient points. An association of herpes zoster and varicella occurred in the patient. Although the onset was mild with some discreet skin lesions, the vesicles subsequently became haemorrhagic and the illness was protracted. It should be stated that too often Aureomycin has been used for many conditions in which this drug could easily have been dispensed with.

DISCUSSION

Three cases of herpes zoster of the lower extremity have been reported, each one showing some salient features and each differing from the other, although the same ganglia were involved in all these cases.

The intensity of the skin eruptions does not provide a definite indication of the extent of the inflammatory process. The first case was very exuberant, yet the course was uneventful, while the last case presented a mild eruption, although the inflammation was severe. The second case showed sacral as well as lumbar involvement.

The relationship of herpes zoster and varicella is still undecided. It is not known if the two conditions are caused by the same strain of virus, or if they are due to different strains of a similar virus. In the third case reported, a varicella-like eruption appeared together with herpes zoster. Was it, as considered by some observers, a zoster generalizatus, zoster universalis or varicelliform zoster, or was it the classical varicella?

The indiscriminate use of Aureomycin for herpes zoster is unwise; only when the clinical course is unfavourable, as occurred with the third patient, is this drug indicated.

Herpes zoster may be symptomatic of pressure on the sensory ganglia, caused by an infiltrative lesion or a new growth such as leukaemia or lymphoblastic process, a tuberculous or syphilitic granuloma, or a metastatic malignancy. Latent leukaemia should be excluded. A differential blood count should become a routine in the investigation of herpes zoster.

Trauma has been reported as a precipitating cause of zoster, which has also been known to occur in association with duodenal ulceration.

Of considerable interest and importance are the rare cases of herpes zoster in the course of which the motor nervous system is affected. Involvement of the upper motor neurones has been reported, but more often lesions of the lower motor neurones occur.

The original virus infection of the posterior sensory ganglion spreads to the cells of the anterior motor horns, and a condition arises which clinically resembles poliomyelitis. No definite relationship of herpes zoster with poliomyelitis has yet been proved.

Many cases of herpes zoster are overlooked, especially when the eruption is discreet and mild and not diffuse. A rich outcrop of vesicles need not be present before herpes zoster can be diagnosed; a solitary erythematous patch with definite clinical symptoms is compatible with such a diagnosis.

CONCLUSIONS

1. Three cases of herpes zoster of the lower extremity are presented, one of them followed by a varicella-like eruption.

2. Conservative treatment is sufficient for most cases, and only in protracted cases need Aureomycin or any other antibiotic be used.

3. Clinical investigation of herpes zoster should be more than casual, and should exclude symptomatic zoster. Blood counts should become a routine in these investigations to exclude leukaemia.

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CONGENITAL TOXOPLASMOSIS

PAULINE KLENERMAN, M.D. (EDIN.)
Paediatric Department, King Edward VIII Hospital, Durban

This report records an interesting case of congenital toxoplasmosis in a Bantu infant 1 month 10 days old.

The diagnosis was proved by sections of brain tissue and serological investigation of blood obtained from the mother (the father's blood was obtained as well). The specimens were flown to Dr. Albert Sabin of the Children's Research Department, Cincinnati, a recognized authority on this subject, and diagnostically confirmed by him.

Up to the present it appears that no proven cases of congenital toxoplasmosis have occurred in South Africa, although the geographical distribution of the disease is fairly global, occurring in North and South America, Great Britain, the Congo, France, Germany, Persia, Japan, etc.

Case Report. An African male baby, aged 1 month and 10 days, was admitted on 12 September and died on 14 September 1950. The delivery was apparently normal, with vertex presentation after a short labour which took place at the King Edward Hospital. The child sucked well. When the mother took him home he developed a cough, with a lot of saliva, and would not suck. He was fed on condensed milk and became progressively weaker; the umbilicus remained 'sore'. The anterior fontanelle was bulging for some time, and the child became cold. There was no diarrhoea or vomiting; the child did not feed well.

On admission, the temperature was below 96° F; subsequently the temperature was 98° F. The pulse rate was 124 per minute and the respirations were 24 per minute. The baby looked moribund. He was cold and his eyes were dull. The anterior fontanelle bulged and the sutures were widely open. The skin was dehydrated. Tissue turgor was poor.

The heart was not enlarged, the sounds were closed and the rhythm normal. Examination of the respiratory system revealed no dullness to percussion. There was bronchial breathing over the right chest. No hepatosplenomegaly was present. The stool was loose, green and watery. The child appeared to be comatose. The pupils were irregular. The deep reflexes were all present, equal and brisk. The plantar reflexes were flexor. The ears, nose and throat were normal.

The cerebro-spinal fluid was under slight pressure; although it looked clear, with slight xanthochromia, a fair number of lymphocytes were present in the fluid. The globulin was markedly increased; there was a small fibrinous clot. The chlorides were 600 mg. per 100 c.c.; sugar, 69 mg. per 100 c.c. No organisms were seen on microscopic examination of the fluid, and no growth was obtained on culture. On the basis of these findings the child was considered probably to have tuberculous meningitis.

Treatment. Coramine 1 c.c., Eucortone 1 c.c. and vitamin C 1 c.c. were given at 4-hourly intervals. In addition penicillin 200,000 units as an initial dose and 100,000 units 6-hourly was administered; P-Sulphathiazole 1 tablet was given immediately and followed by a half-tablet 6-hourly; Streptomycin 0.5 gm. twice daily by injection and 50 mg. intrathecally; PAS 1 tablet twice daily; Hartmans solution orally; oxygen. The child died on 14 September 1950, two days after admission to hospital.

Autopsy. Hydrocepalus was present. Scattered areas of necrosis were seen in the brain. There was no tuberculous lesion in the lungs or brain.

Microscopic Examination. Section of the brain showed considerable necrosis, especially around the fourth and lateral ventricles with a surrounding early gliosis and infiltration of eosinophils and phagocytic cells. There were numerous other scattered foci of microglia. Many of these swollen phagocytic cells contained groups of coccoid bodies as seen in toxoplasmosis.

There was widespread oedema, perivascular cuffing, petechial haemorrhage and diffuse astrocytic proliferation in the wall of the ventricles. Focal areas of necrosis, with surrounding phagocytic cells, were present. In these areas were seen ovoid cells about 15 to 20 μ in diameter packed with minute basophilic ovoid-shaped bodies about 2 μ in diameter as seen in toxoplasmosis. No extracellular organisms were seen and no calcification was present in sections from different parts of the brain. No lesions were found in other organs.*

DISCUSSION

Toxoplasmosis is an infectious disease caused by a protozoan of the genus Toxoplasma. It occurs in lower animals and has been demonstrated in the cat and the dog and may be voided in the urine and faeces, conveyed by contamination of the hands to the mouth with consequent spread of the disease.[1] Furthermore, it is found in sheep, rabbits, guinea pigs, mice, pigeons and possibly in the squirrel, the mink and in foxes; these animals may be carriers of the disease. The toxoplasma has also been found in a pigeon by Dr. H. Feldman in Cincinnati.

According to Pinkerton and Henderson, 'purely circumstantial evidence suggests that the disease may be transmitted by ticks. The presence of organisms in bronchioles also indicates that direct droplet transmission from person to person may take place. These possibilities are being investigated'.[2]

The toxoplasma was first identified in 1909, but it was not until 1939 that it was recognized as a cause of disease in human beings.

The disease is characterized by a tetrad of conditions:

1. Congenital encephalomyelitis with hydrocephalus or microcephalus.
2. Chorioretinitis (macular regions).
3. Cerebral calcification (shown by X-ray examination).
4. Disturbances of the nervous system in the newborn; infants or children may experience convulsions; neurological symptoms may indicate that there is extensive brain damage.

In some cases one or other of these conditions may be missing.

* *Post mortem* and histological examination by Dr. J. Wainwright, Central Pathological Department, Addington Hospital, Durban.

A mother with toxoplasma may exhibit no clinically recognizable signs of the infection, nor does she feel ill during pregnancy, yet the nervous system of the foetus may be severely affected, particularly the eye.[1] In the acquired form, which occurs post-natally, encephalitis (non-suppurative)[3] in children may take place, and also a variety resembling a spotted fever with a rash and atypical pneumonia.[2] This paper confines itself to the congenital variety.

Congenital toxoplasmosis, in which hydrocephalus has occurred, may be encountered by the obstetrician, the nature of the disease being recognized at necropsy. Constitutional symptoms may be vomiting, a labile temperature, diarrhoea and there may be no signs of hydrocephalus or microcephalus detected in the first few days.

In the present case the child exhibited a subnormal temperature of 96° F, the hands and legs were icy cold, the fontanelle was bulging, all sutures were widely open and the general appearance together with cerebrospinal fluid findings suggested a possible tuberculous meningitis. However, this was subject to grave doubt, as I have not encountered tuberculous meningitis at this early age, although other forms of tuberculosis, e.g. pulmonary involvement, have occurred in the Bantu at a few weeks of life. In European paediatric practice I have not met a case which suggested toxoplasmosis.

The cerebro-spinal fluid findings in toxoplasmosis are as follows: xanthochromia; markedly increased protein; predominantly mononuclear pleocytosis; red blood cells are frequently present; sugar and chlorides occasionally below normal.[4] (In the case here reported, the chlorides were 600 mg. per 100 c.c. and the sugar 69 mg. per 100 c.c.)

This patient succumbed after two days in hospital before any further investigations, such as X-rays of the skull, examination of optic discs, etc., were undertaken. At autopsy sections of the brain were stained with haemotoxylin and eosin, and exhibited toxoplasma bodies as described in the histological report.

The following report was received from Dr. Albert B. Sabin of Cincinnati: 'The material you sent me on the African child clearly showed that death was due to congenital toxoplasmosis. The forms plentifully present in the sections of the brain are morphologically entirely compatible with toxoplasma . . . The dye test for the toxoplasmosa antibodies was carried out by Dr. Harry A. Feldman of Syracuse University, New York. The mother's serum had a titre of 1 : 1024, while the father's serum had a titre of less than 1 : 64. The high titre present in the mother's serum is of a magnitude usually encountered in the blood of mothers who give birth to children with congenital toxoplasmosis. Accordingly, I think you have every right to report this case as an unquestionable instance of congenital toxoplasmosis, and, if I am not mistaken, this would be the first such case reported from South Africa.' (The dye test titres of normal serums rarely exceed 1 : 64.)

It has been recognized that many children with congenital toxoplasmosis survive, presenting nervous symptoms and visual disturbance when several months or years old. Toxoplasma antibodies were present in the serum of such children and also in the mothers.

The outlook for a subsequent child is good.

Treatment. In the experimental animal sulphonamides have been used with some success, but there is no specific drug for man.

It is quite apparent that this clinical entity does exist, and calls for more vigilance in future, when probably more cases may come to light.

I wish to thank the following persons sincerely for their generous help: Dr. J. Wainwright of the Central Pathological Laboratory, Addington Hospital, Durban, for the post-mortem findings and for the histological diagnosis of toxoplasmosis; and Dr. Albert B. Sabin, Cincinnati, for his kindly help and examination of the stained specimen, and Dr. H. Feldman of Syracuse University, New York, for the dye test performed on the serum submitted.

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CHLORAMPHENICOL IN TYPHOID FEVER

L. HIRSOWITZ, M.D. (RAND)
and
M. J. GOLDBERG, M.B., B.CH. (RAND)
Baragwanath Hospital, Johannesburg

During a recent outbreak of typhoid fever at Evaton, Transvaal, 40 Bantu patients were admitted to Baragwanath Hospital under our care. An excellent opportunity afforded itself of studying the therapeutic effect of Chloramphenicol, notwithstanding the fact that its efficacy in typhoid fever seems to have been established (Woodward *et al.*, 1948; Douglas, 1949; Cook and Marmion, 1949; Rankin and Grimble, 1950; El Ramli, 1950; Good and Mackenzie, 1950).

CLINICAL MATERIAL AND METHODS

This series comprises 22 males and 18 females. Eighteen patients were children (under 12 years) and 22 were adults. The youngest patient treated was two years old and the eldest 42. Thirty-six patients (90%) were under the age of 30 years.

In order that there should be no doubt about the diagnosis in these cases, no case has been included which did not conform to one or more of the following criteria:

1. A positive blood culture.
2. A positive sternal marrow culture.
3. A urine or stool specimen containing typhoid bacilli.
4. A post-mortem examination with findings considered pathognomonic of typhoid fever.
5. A significant or rising agglutinin titre with clinical features suggestive of typhoid infection.

H agglutination to a titre of 1:100 or O agglutination

to a titre of 1:200, or both, have been used as minimum diagnostic titres. These titres conform with the minimum diagnostic titres suggested by Lewin (1938) for use on the Witwatersrand.

In assessing the degree of severity, attention has been paid to such manifestations as delirium, coma, stupor, severe diarrhoea, meteorism and marked tachycardia. On this basis 11 of the 40 cases were classified as mild, 13 as moderately ill and 16 as seriously ill. This classification, however, may be open to criticism. The degree of toxaemia exhibited by the patient may be a matter of the observer's opinion. There is no satisfactory way of recording toxaemia, and a patient who is considered to be 'dangerously ill' because he has passed blood per rectum may be in far less danger than another patient who only looks 'slightly toxic'.

In estimating the efficacy of Chloramphenicol therapy, mortality rate, development of complications and changes in the temperature and clinical condition of the patient have been considered. The average duration of the time spent in hospital in treated and untreated cases was unreliable as a criterion of the efficacy of Chloramphenicol therapy, as patients of both groups were allowed a lengthy convalescence in hospital.

Nineteen patients received chloramphenicol, while 21 received the same routine nursing, dietetic and symptomatic therapy without this drug. The cases which did not receive Chloramphenicol are not to be regarded as 'controls', but rather as mild or moderately ill patients for whom anxiety was not specially felt. This partial selection was occasioned by shortage of Chloramphenicol supplies.

Each of the 19 patients received an initial dose of 50 to 100 mg. per kilogram of body weight. The commencing dose varied from 1.5 to 6.0 gm. of Chloramphenicol, the usual dose in an adult being 3.0 gm., followed by 0.25 gm. two-hourly until the temperature was normal for 48 hours. Thereafter, 0.25 gm. was administered four-hourly for a variable period of time. The average duration of treatment (deaths excluded) was 14.1 days. The total amount of Chloramphenicol administered varied from 16 gm. to 69 gm.; the average total was 36.8 gm.

RESULTS

Mortality. Four patients, three of whom received Chloramphenicol, died. One death occurred during a relapse. Death in another occurred five days after admission to hospital. The third patient, moribund on admission, died within 36 hours of the commencement of treatment. One other patient who was gravely ill on admission died four hours later before institution of Chloramphenicol therapy.

Death was attributable to toxaemia in all. In one, peripheral circulatory failure was the immediate cause of death; in another, lobar pneumonia and gastro-intestinal haemorrhage were contributing factors.

Relapse. Relapses were observed in nine patients (22.5%). Three of these patients received Chloramphenicol initially for ten, nine, and eight days respectively. Fever recurred 12 days after the initial temperature had subsided in two of these cases, while in the third, relapse occurred after an afebrile period of 19 days. One of these patients died, the others responded satisfactorily when Chloramphenicol was resumed. One other patient, who was treated symptomatically during the initial febrile period, received Chloramphenicol during the relapse because of rapid deterioration in the general condition. Response was dramatic, fever dropped from 105° F to 101° F in 24 hours and settled on the third day. Of the remaining five untreated cases, fever recurred on the 6th, 8th, 9th, 13th and 14th day respectively, after the initial pyrexia had settled.

One untreated case experienced two relapses; in the remaining eight a single relapse was observed. Duration of relapses varied from eight to 17 days, with an average of 11 days. Results are given in Table 1. It will be seen that relapse in the treated cases occurred later than in the untreated 'controls'.

TABLE 1: COMPARISON OF THREE PATIENTS WHO RELAPSED ON CHLORAMPHENICOL WITH SIX UNTREATED CASES

	Number of Cases	*Initial Duration of Fever*	*Relapse (Average Day of Onset)*	*Duration of Relapse (Average Number of Days)*
Treated ..	3	12	14·7	11·6*
Untreated ..	6	8	9·5	10·0†

* One patient died during a relapse.
† One patient received Chloramphenicol during the relapse (see text).

Temperature Response. (Patients who died or relapsed are excluded.) Duration of fever in treated and untreated cases is shown in Tables 2 and 3. Of these 28 patients, 13 received Chloramphenicol and 15 did not. In 24 cases the duration of symptoms before commencement of treatment was known. It will be noted that the average duration of fever (6.5 days) in the treated cases was less than that (12.8 days) of the untreated group (Table 2).

TABLE 2: COMPARISON OF THIRTEEN TREATED CASES WITH FIFTEEN PATIENTS WHO DID NOT RECEIVE CHLORAMPHENICOL

	Number of Cases	*Duration of Fever (Average Number of Days)*
Treated	13	6·5
Untreated	15	12·8

The temperature response was more significant amongst patients treated during the second and third week of their illness, although, admittedly, the series is small (Table 3).

The average duration of fever after commencement of treatment was 6.5 days. The shortest duration was 72 hours, the longest 20 days. In five instances (26.4%) the temperature fell from 105° F to 101° F or 100° F within three days, with concomitant subjective and clinical improvement; thereafter, mild fever of 99.5° F to 100° F persisted for a further five to 10 days.

DISCUSSION

The greater mortality among the treated cases is undoubtedly due to selection of cases, as all seriously

TABLE 3: COMPARISON OF THIRTEEN PATIENTS TREATED WITH CHLORAMPHENICOL WITH FIFTEEN UNTREATED CASES, ACCORDING TO THE STAGE OF THE DISEASE WHEN TREATMENT WAS COMMENCED

Stage of Disease when Treatment Commenced	*Duration of Symptoms when Treatment Commenced (Average Number of Days)*		*Number of Cases*		*Duration of Fever (Average Number of Days)*	
	Treated	*Untreated*	*Treated*	*Untreated*	*Treated*	*Untreated*
First week ..	6·2	5	5	7	6·6	8·3
Second week	10·6	11·1	3	5	8·7	16·3
Third week	20	21	1	2	5·0	11·5
Fourth week	28	—	1	—	5·0	—
Unknown ..	—	—	3	1	6·6	15·0
Total ..	—	—	13	15	6·5	12·8

ill patients received Chloramphenicol. Mortality for the whole series was 10% (four deaths). Two of these deaths, however, occurred within four and thirty-six hours, respectively, of admission.

The incidence of relapse was less in the treated group (16.7%) than in untreated cases (28.6%). It is possible that had Chloramphenicol been continued for a longer period, the relapse rate would have been less. Smadel *et al.* (1949) report a striking relation between duration of treatment and incidence of relapse. They noted clinical relapse in seven of 13 patients whose initial course of Chloramphenicol was eight days or less. In a group of 19 patients receiving Chloramphenicol for nine to 14 days, there were no relapses. Two of our patients were treated for nine and 10 days respectively, but this did not prevent relapses. According to Smadel and his associates (1949) there is little advantage in continuing treatment for more than 14 days. Rankin and Grimble (1950), however, report a case in which treatment had been given for 20 days, a total of 37.5 gm. of Chloramphenicol being administered. The patient relapsed after remaining afebrile for 29 days.

The relapse rate varies in different series but it is high. Rankin and Grimble (1950) reported four relapses (44%) in nine cases treated with Chloramphenicol, whereas among eight untreated cases there were four relapses (50%). El Ramli (1950) reported a relapse-rate of 27.5% in 200 treated cases. He further showed that the relapse rate was significantly reduced when treatment was given 12-hourly instead of 2-hourly or 4-hourly (13.8% as against 22.7% and 39.4% respectively).

The high incidence of relapse in treated cases is probably due to the fact that the drug is bacteriostatic and not bactericidal. In two cases *B. typhosus* was cultured from the blood during the relapse. Colquhoun and Weetch (1950) have suggested that some relapses may be due to development of Chloramphenicol-resistance. These authors report one such case.

The febrile response after treatment was by no means uniform. The average duration of fever was 6.5 days (deaths and relapses excluded). In five instances (26.4%) fever persisted for two weeks or longer after an initial fall. These figures are somewhat higher than those quoted in the literature. Thus, El Ramli (1950) in a series of 200 cases, reports that fever persisted for an average of 3.5 days after treatment was commenced. Woodward (1949) records similar findings. El Ramli (1950) found that in only 3.5% of cases did the temperature remain elevated for eight to 21 days.

Toxaemia persisted for a variable period in a few cases after fever had abated. This conflicts with the findings of Woodward (1949) who reported that reduced toxicity paralleled or preceded the return of temperature to normal in 21 cases.

Mild toxic effects, ascribed to Chloramphenicol, were observed in a few patients. These included anorexia, vomiting and glossitis. A black, hairy fur developed on the tongue in one case. No variation in titres of H and O agglutinins could be attributed to Chloramphenicol treatment.

SUMMARY

1. The results of treatment in 40 Bantu patients with typhoid fever are recorded. Nineteen patients received Chloramphenicol, 21 did not.

2. Chloramphenicol is a valuable drug in typhoid fever; without it, the mortality in our series of cases would have been considerably higher. The greater mortality in the treated group is undoubtedly due to selection of cases, as all seriously ill patients received treatment.

We wish to thank Dr. J. Allen for permission to use the hospital records. We are deeply grateful to Dr. J. C. Gilroy and Dr. A. D. Gillanders for their helpful criticism in the preparation of this paper.

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QUESTIONS ANSWERED

DRUG TREATMENT OF CEREBRAL PALSY

Q. In the treatment of infantile cerebral palsy, are there any drugs which have been found useful?

A. Cerebral palsy is a condition which arises in early life, due either to imperfect development of the brain or to cerebral damage resulting from childbirth. It is characterized by motor disability which may be associated with spasticity, rigidity or flaccidity of the muscles, with ataxia, or with involuntary movements. In addition to the motor involvement, which may take the form of a monoplegia, a hemiplegia, a diplegia or a quadriplegia, associated features may be present. Squints are common and blindness may occur with or without optic

atrophy; deafness to certain tones is not infrequently present, and may modify the child's educability; epilepsy, dribbling and hydrocephalus may be present.

It is not obvious whether the question refers only to the treatment of the muscular disorder. In any case, in view of the diversity of the motor disabilities with which such patients may be afflicted, no one group of drugs can be considered to be specifically beneficial in cases of cerebral palsy. A child with a flaccid hemiplegia cannot be expected to benefit from a drug like Myanesin, while it may reduce the tone in a child with spastic limbs.

Jepson[1] and Pohl[2] have given accounts of the effects of prostigmine in cases of cerebral palsy characterized by rigidity. Hall and Brenda,[3] however, subsequently reported that the results were disappointing.

In the treatment of cerebral palsy, drugs at present have a small role, unless directed at an associated feature like epilepsy. Contracted, spastic limbs may be treated operatively; the important work of Krynauw[4] in this country has given fresh impetus to the neurosurgical approach. Therapy is best served by the establishment of residential remedial schools, where intensive training may be conducted under the co-ordinated instruction of physiotherapists, occupational therapists, speech trainers, school teachers, psychologists and medical personnel.[5]

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IN MEMORIAM

PROF. FREDERICK KARL KLEINE

Professor Kleine, who died on 22 March at the age of 81, was the last surviving personal assistant of Robert Koch and succeeded him as the Director of the world-famous Robert Koch Institute in Berlin.

His principal work was in connexion with trypanosomiasis, on which he spent many years in Central Africa, and between the two wars he was a member of the International Commission on Sleeping Sickness, appointed by the League of Nations.

In the 20's of this century he experimented, by arrangement with the Northern Rhodesian Government, with Germanin (Bayer-205) in the treatment of sleeping sickness and particularly as a prophylaxis of animal trypanosomiasis. Although he was financed by the German Dye Trust, who were the makers of Germanin, his scientific honesty led to but a partial endorsement of the value of 205 in treatment and a negative recommendation as regards its value as a prophylactic.

Of special interest to South Africa perhaps is that Kleine accompanied Robert Koch about half a century ago in the early days of the Veterinary Research Institute, at the invitation of the late Sir Arnold Theiler, to study rinderpest.

Kleine was the author of a great many publications, particularly on trypanosomiasis. In this field he was one of the earliest workers and he never lost interest in the subject, even in the last few years of his life when he was a semi-invalid as a result of the privations during the war and the following years before he could escape to South Africa.

A typical German scientist, Kleine's only interest was his work, and this was particularly distinguished by absolute scientific integrity. He lived to see accepted many of his theories, which in the early days were doubted and even actively opposed. Among these was his rejection of the mechanical means of transmission of trypanosomiasis and his strong belief in the identity of gambiensi and rhodesiensi diseases.

A. J. Orenstein.

P.O. Box 1056,
Johannesburg.
27 March 1951.

PASSING EVENTS

CAPE TOWN DERMATOLOGICAL AND VENEREOLOGICAL SUB-GROUP

A meeting of this Sub-Group will be held on Tuesday, 24 April, in the Small Lecture Theatre (A Floor), Groote Schuur Hospital, at 8.15 p.m.

A paper will be read by Dr. J. I. Lipschitz on *Some Observations on Psoriasis.* All interested are welcome.

CAPE TOWN PAEDIATRIC GROUP

A meeting will be held at Groote Schuur Hospital in the Small Lecture Theatre on Monday, 30 April 1951, at 8.15 p.m.

Dr. J. L. van Selm will speak on *Common Eye Disorders in Childhood.*

* * * *

Dr. J. D. M. Barton, Norwood Lodge, 31 Yalta Road, Pietermaritzburg, Natal, has begun practice as a Specialist Anaesthetist. Telephones: Rooms 3533; Residence 2705.

* * * *

We deeply regret to record the death of Dr. Robert Broom, F.R.S.

* * * *

Dr. T. E. Lynch, his wife and family have recently returned to Komgha after a two-year visit to the United Kingdom where Dr. Lynch did post-graduate work.

VACUUM

A REVIEW OF DEVELOPMENTS IN VACUUM RESEARCH AND ENGINEERING

Vacuum is a quarterly journal available on a subscription basis. Subscription fees: British Isles £1 5s. and elsewhere £1 10s. Advertising is restricted to products and equipment of vacuum interest.

Vacuum is designed to fill a need in the scientific literature by reporting only on vacuum matters. It is addressed to the scientist and industrialist using vacuum procedures and further to specialists in all fields of science and industry to whom a knowledge of progress in vacuum matters is necessary or of value to their work.

Vacuum is an authoritative publication designed to advance high vacuum technology generally. To this end the contributory and advertising pages are open to all, subject only to the usual condition that contributed articles comply with the object of the journal and meet the approval of referees.

Vacuum was originally conceived, in response to constant requests to make generally available a highly organized abstracting service. In view of the absence of a journal in the English language adequately reporting vacuum developments, it was considered that *Vacuum* could valuably include original contributions covering the scope of the technique.

Vacuum will primarily consist of the contributory section (18,000 words in the first issue), of expert articles from international specialists and the abstracts extensively classified and specially printed for detached filing (12,000 words in the first issue). Other feature series will be added as the need of the specialist readers becomes established.

This new journal is published by W. Edwards & Co. (London) Ltd., Worsley Bridge Road, Lower Sydenham, London, S.E.26, England.

THE NATIONAL CORPORATION FOR THE CARE OF OLD PEOPLE

NOTES ON THE THIRD ANNUAL REPORT

At the commencement of their Report the Governors of the National Corporation are proud to announce that Her Majesty the Queen has graciously consented to become the Patron of the Corporation.

In this third year since formation there has been an increase in the work, not in increased grant giving but in other ways. The Corporation has, for example, been making strenuous efforts to obtain agreement between the National Health Service and local authorities in the setting up of experimental Homes, designed to take people who need no further skilled nursing in hospital but who would not receive sufficient care and attention in 'Part III accommodation', provided by the welfare authorities. The Corporation has offered to provide the necessary capital and has suggested that maintenance should be shared between the hospitals and welfare authorities. Account is given of work in connection with four such Homes, one in Scotland, one in Northern Ireland, and two in England.

The Corporation considers that standards in local authority Homes are sometimes too high: 'few old people in their own homes are able to maintain the standard which some local authorities are setting'. Reference is made to the cost which the acceptance of such standards throughout the country would entail. There is also criticism of the recommendations of some Fire Officers in respect of new Homes because they involve the Homes in heavy expenditure which is considered not always to be necessary.

Consideration has been given to the care of old people in their own homes. The Corporation is anxious to discover what can best be done for them: a grant made to a laundry scheme has been a first step in this field. It also draws the attention of the smaller voluntary committees to the slight cost and great value of non-residential clubs especially when open several days a week; the Corporation has continued to assist in their provision.

During the year there were 91 applications for assistance and the total sum allocated or paid out was £125,429. It is stated that on the whole the standard of the proposals made has been higher than that of the previous year.

The Corporation continues to provide the secretariat for three other organizations which are setting up Homes for elderly people. Two Homes have been open for some time, a third is about to be opened, and steps towards the opening of two others are in their early stages.

Although not included in the Report, the Corporation hopes soon to publish notes on the purchase and adaptation of existing properties for use as Homes for old people. This is designed to assist voluntary committees by giving details of the type of accommodation which is considered necessary.

THE SOUTH AFRICAN MEDICAL AND DENTAL COUNCIL

REPORTS OF DISCIPLINARY INQUIRIES

The Council at its meeting held in March 1951, considered a report of a Special Disciplinary Committee which held an inquiry into the conduct of Dr. E. L. G. . . . The following charge was preferred:—

'That you, being a medical practitioner registered under the provisions of the Medical, Dental and Pharmacy Act 1928 (Act 13 of 1928), as amended, are guilty of improper conduct or disgraceful conduct or conduct which, when regard is had to your profession, is improper or disgraceful, in that you were convicted in the Supreme Court of South Africa (Transvaal Provincial Division) on 23 August 1950, on one count of procuring abortion and of culpable homicide, in respect of which conviction you were sentenced to a fine of £100 or six months' imprisonment with hard labour and 12 months' imprisonment with hard labour respectively.'

The Council confirmed the finding of the Special Disciplinary Committee, viz. that Dr. E. L. G. be found guilty of disgraceful conduct when regard is had to his profession. The Council further resolved that his name be erased from the medical register.

* * * *

The Council at its meeting held in Cape Town during March 1951, held an inquiry into the conduct of Dr. C. K., when the following charge which was preferred against him was considered:—

'That you being a medical practitioner registered under the Medical, Dental and Pharmacy Act 1928 (Act No. 13 of 1928) as amended, are guilty of improper conduct or disgraceful conduct or conduct which, when regard is had to your profession or calling, is improper or disgraceful, in that on or about 17 June 1950, you committed certain sexual acts with one . . . in the circumstances set out in your evidence given in the case of *Rex* v. *Yourself*, heard between the dates 19 June 1950 to 28 July 1950, in the Magistrate's Court at . . ., a copy of which evidence is attached hereto marked "A".'

At the conclusion of the inquiry the Council after deliberating in Committee, resolved that:—

Dr. C. K. being a medical practitioner registered under the Medical, Dental and Pharmacy Act 1928 (Act No. 13 of 1928) as amended, was guilty of conduct which when regard is had to his profession or calling, is disgraceful, in that on or about 17 June 1950, he committed certain sexual acts with one . . . in the circumstances set out in his evidence given in the case of *Rex* v. *Himself*, heard between the dates 19 June 1950 to 28 July 1950, in the Magistrate's Court at . . ., a copy of which evidence was attached to the summons.

The penalty is that he be suspended from practice or performing acts specially pertaining to his profession for a period of three months as from 1 April 1951.

REVIEWS OF BOOKS

DIGEST OF SURGERY

Yearly Surgical Digest. By Richard A. Leonardo, M.D., Ch.M., D.I.B.S., F.I.C.S. (Pp. 293. $3.00.) New York: Froben Press, Inc.—Publishers. 1950.

In order to keep abreast with modern surgical literature, hours of daily reading would be necessary. For the average surgeon, engaged in a busy practice, this task will be impossible. Once again a yearly digest of surgical literature has come to the aid of the medical man.

Dr. Richard A. Leonardo is a well-known author and general surgeon, and has published his first series of summaries of current surgical literature. It covers every branch of surgery and provides useful and interesting reading. The book is written in a simple style with avoidance of repetition. By placing the summaries in alphabetical sequence, reference can readily be made to various articles.

The book, however, falls down in certain respects. The absence of references is a serious omission. The inclusion also of a few diagrams and improvement in the quality of the paper would greatly enhance the value of this book.

The articles have been well selected and cover the problems which confront the general surgeon daily.

OBSTETRICS AND GYNAECOLOGY

The 1950 Year Book of Obstetrics and Gynecology. Edited by J. P. Greenhill, B.S., M.D., F.A.C.S. (Pp. 570 with 108 figures. $5.00.) Chicago: The Year Book Publishers, Inc. 1950.

Contents: 1. Progress in Obstetrics and Gynecology, 1940-50. *Obstetrics:* 2. Pregnancy. 3. Labor. 4. Puerperium. 5. The Newborn. *Gynecology:* 6. General Principles. 7. Diagnosis. 8. Infertility. 9. Operative Technic. 10. Infections. 11. Benign Tumors. 12. Special Ovarian Tumors. 13. Malignant Tumors. 14. Menstrual Disorders. 15. Endocrinology.

The 1950 edition of this well-known publication has taken the same form as its predecessors. It consists of a summary of world publications in obstetrics and gynaecology for the period August 1949 to July 1950, supplemented by comments on most of the articles by the editor, Prof. J. P. Greenhill.

A welcome addition in this Year Book is a review of the progress in obstetrics and gynaecology in the past decade. The Editor has given a succinct survey of the advances in our knowledge of the physiology, pathology and clinical aspects of the specialty. It is shown in which ways, and to what a great extent, obstetrics and gynaecology have benefited by chemotherapy, diagnostic- and radiotherapy and blood trans-

fusions; the more specific advances in obstetrics have concerned the Rh factor, a better understanding of the endocrinology of pregnancy and the menstrual cycle, earlier diagnosis of cancer of the uterus, and the progress in the investigations and treatment of sterility in the female and male. In spite of these strides in the past 10 years it is clearly shown that there is much room for improvement, because many mothers and babies are still lost because of preventable causes.

The articles published during the year under review cover practically every aspect of the specialty. The previous enthusiasm for hormonal therapy in the treatment of habitual and threatened abortion is on the wane, and the tendency of the majority to-day is to abandon endocrine therapy and to rely mainly on general and non-specific measures. Following the enormous volume of publications on placenta praevia, opinion has crystallized in favour of its conservative treatment whenever possible. British obstetricians will be pleased to see how American opinion is leaning towards the view, long held in Britain, that utero-vaginal tamponade is only seldom indicated in the treatment of post-partum haemorrhage. Much has been written on sterility with the main emphasis on male infertility and hormonal treatment of both the female and male.

There is little new on operative technique. There is obviously a great increase in the caesarean section rate. One welcomes the statement by the Editor that because of antibiotics 'more women may be given a test of labour, and it may be longer, even with ruptured membranes'. But a great number of obstetricians will be distressed by his view that 'if uterine inertia is diagnosed after 24 or 36 hours, a caesarean section is safe—it is almost equivalent to neglect to permit patients to labour for 72 hours'. Many would not regard an extra day's labour as important, provided the maternal and foetal conditions are good, when the alternative is an abdominal operation and probably caesarean sections for all the subsequent children.

In welcoming this annual publication, its wide circle of readers cannot fail to be impressed with the tremendous amount of work that it entails on the part of the Editor, and the excellent organization that must lie behind the collection, translation, and summarizing of these hundreds of publications.

MEDICAL ADVENTURE

Medical Adventure. By Dr. K. M. Hiranandani. Pp. 76 + viii. 6d.) Madras, India: The Antiseptic Press.

The format of this pamphlet is just right for easy despatch into the waste-paper basket.

PATHOLOGY IN COLOUR

Color Atlas of Pathology. Prepared under the auspices of the U.S. Naval Medical School of the National Naval Medical Center, Bethesda, Maryland. (Pp. 546 + xi, illustrated with 1,053 figures in color on 365 plates. £7.) Philadelphia, London, Montreal: J. B. Lippincott Company.

Contents: 1. Diseases of the Hematopoietic System. 2. Diseases of the Reticulo-Endothelial System. 3. Diseases of the Respiratory Tract. 4. Diseases of the Cardiovascular System. 5. Diseases of the Alimentary Tract. 6. Diseases of the Liver. 7. Diseases of the Kidney and Urinary Tract. 8. Diseases of the Musculoskeletal System. Index.

This volume represents a very remarkable achievement. There are very few colour atlases available which cover the field of pathology at all; but the comprehensive scope of this volume makes it almost encyclopaedic in its qualities. Although primarily devoted to microscopy, the great advantage which this Atlas possesses is that it includes colour illustrations of naked-eye specimens as well as clinical photographs and X-ray illustrations. There is a valuable, adequate amount of descriptive text matter which includes succinct case histories.

The quality of the colour reproductions is superb, whether blood cells, tissues or organs are being presented.

The volume should be invaluable to the medical student throughout the whole of his career. The production is indeed a thing of beauty and will grace the library shelf of the practising physician and pathologist as well.

ADLERIAN PSYCHOLOGY

Adler's Way in Psychology. By Lewis Way. (Pp. 334. 18s.) London: George Allen & Unwin Ltd. 1950.

Contents: 1. Inferiority and its Compensations. 2. Wholeness and Purpose. 3. The Guiding Fiction. 4. The Neurotic Character. 5. Sex and its Deviations. 6. Anxiety and the Neuroses. 7. The Nature of Social Interest. 8. Problems of Practical Adaptation. 9. The Prevention and Cure of Neurosis. 10. A Critique of Psychoanalysis. 11. Individual Psychology and Rival Schools. 12. Individual Psychology and Social Ideals.

This book, written by a man who was both a student and a personal friend of Adler's, will be of interest to the layman as well as to the student wishing to obtain an accurate account of the part played by Adler as a contributor in the psychological field. The author does not dwell on the details of Adler's personal life, but confines himself to reviewing and evaluating his scientific theories. Stress is also laid on the differences between his concepts and those of Freud.

There are no long case histories to be found, as one of the main aims of the author has been to give details of the basis for Adler's concepts and thus deny the opinion commonly expressed that Adler was but a superficial psychologist. In this the author has achieved his purpose.

VIRUS AND RICKETTSIAL DISEASES

Virus and Rickettsial Diseases. By S. P. Bedson, M.D., F.R.C.P., F.R.S., A. W. Downie, D.Sc., M.D., F. O. MacCallum, B.Sc., M.D., and C. H. Stuart-Harris, M.D., F.R.C.P. (Pp. 382 + viii. With 33 figures. 24s.) London: Edward Arnold & Company. 1950.

Contents: 1. Viruses: Some General Considerations. 2. Immunity. 3. The Natural History of Virus Disease. 4. Chemotherapy. 5. The Rickettsiae. 6. Psittacosis-Lymphogranuloma Venereum Group. 7. Smallpox. 8. Chicken-pox and Zoster. 9. Molluscum Contagiosum and Warts. 10. Herpes Simplex. 11. Influenza, Common Cold and Other Acute Respiratory Infections. 12. Measles and Rubella. 13. Mumps. 14. Glandular Fever. 15. Hepatitis. 16. Gastro-Enteritis. 17. Rabies. 18. Arthropod-Borne Virus Encephalitis. 19. Diseases of the Central Nervous System Suspected of Being due to Viruses. 20. Acute Anterior Poliomyelitis. 21. Virus Meningitis. 22. Yellow Fever, Dengue, Sandfly Fever, and Rift Valley Fever. 23. Animal Viruses Affecting Man. 24. Bacteriophage. Appendix. Index.

For many years viruses have been regarded as falling within the realm of the academic bacteriologists. Reliance had to be placed on the clinical features to establish a diagnosis, and the laboratory seldom gave any assistance.

Recent years have seen a rapid change—more is known about viruses and virus diseases, and with this knowledge have come laboratory aids in diagnosis and treatment. More, too, is being learnt of the structure of viruses and their relationship to tissue cells. No longer, therefore, can the clinician remain in ignorance of viruses. To obtain a working knowledge of them from the wealth of literature already published would, however, have been a superhuman task.

This little book meets the urgent need which has been created. Written by world authorities on the individual viruses or virus groups, it brings together in a pleasantly readable form the information required by medical student and practitioner.

It is not a clinical textbook or a textbook of virology, but the essential link between them. It is not the fault of the authors that, with the rapidly accumulating knowledge of viruses, some recent advances have not been included.

This excellent book, easy to read, should be in the possession of every medical practitioner and medical student.

MALARIA

The Conquest of Malaria. By Dr. Jaime Jaramillo-Arango. (Pp. 125 + xiv, with 36 illustrations. 21s.) London: William Heinemann, Medical Books, Limited. 1950.

Contents: Part 1. The Mosquito-Malaria Theory. Part 2. A Critical Review. Part 3. Progress Achieved in the Prevention and Treatment of Malaria.

Malaria is one of the oldest diseases known to man, and has affected his history. The struggle against this wide-spread disease is described in this book, and the pioneer investigators (with photographs of some) are recorded.

The author, who is well known as an accurate historian, took three years to complete his research on the subject. By consulting original records he has discovered many inaccuracies in the literature.

The book has most interesting illustrations and is written in a good literary style. It will be of interest to all physicians and partcularly to students of medical history.

HEART DISEASE IN PREGNANCY

Heart Disease in Pregnancy. By A. Morgan Jones, M.Sc., M.B. (Vict.), F.R.C.P. (Lond.). (Pp. 57 + x, with 7 Tables. 6s.) London: Messrs. Harvey & Blythe. 1951.

Contents: 1. Foreword. 2. Introduction. 3. The Circulation in Pregnancy. 4. Cardiovascular Signs and Symptoms in Normal Pregnancy. 5. Diagnosis of Organic Heart Disease during Pregnancy. 6. Causes of Maternal Death. 7. Assesment of Fitness for Pregnancy. 8. Management of Termination. 9. Antenatal Supervision. 10. Management of Confinement. 11. Problems of the Post-Partum Period. 12. Effect of Pregnancy on the Course of Rheumatic Heart Disease. 13. Summary. 14. References. 15. Index.

Dr. Morgan Jones is to be warmly congratulated on producing in this difficult field a monograph that is easily readable and full of practical advice. This volume ought to do much to assist the doctor in deciding on his policy when faced with a pregnant woman with heart disease. There is often too great a tendency towards terminating a pregnancy without a full appreciation of the facts that many cardiac patients tolerate the condition extremely well, and that interference carries with it risks that are no less than those associated with the continuation of the pregnancy and a natural labour. 'We are past the stage of counting murmurs and assessing the gravity of the prognosis in proportion.'

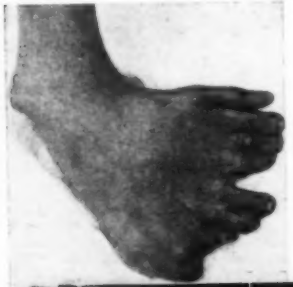
The author deals with the physiological changes in the circulatory system associated with pregnancy and how these affect the cardiac status. He gives a practical grouping based on cardiac function, as a guide to management and decision with regard to termination. The chapter on the recognition of the early signs of failure is particularly valuable.

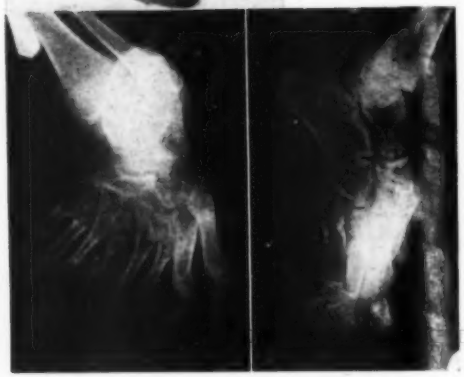
This is a clearly written monograph, obviously based on personal experience and full understanding of the subject. Every doctor would find the time taken to read the 57 pages well spent.

CORRESPONDENCE

ORTHOPAEDIC PROBLEM

To the Editor: These illustrations may be of interest to your readers. It might well be entitled *The Orthopaedist's Dilemma* or *What to Take and What to Leave*. The patient, a South African small Indian girl, nine years of age, unfortunately did not return for operation.





Alan B. Taylor,
Medical Superintendent.

McCord Zulu Hospital,
28 McCord Road,
Durban.
9 March 1951.

EINSTEIN AND INTEGRATIONALISM

To the Editor: Dr. Freed's letter in the *Journal* of 17 March represents an interesting innovation in the age-long controversy of 'free-will' or 'determinism', in that by a matter of analogical reasoning both are deftly combined in a theistical whole.

I agree with Dr. Freed in that the components of the universe—matter, energy, time, etc.—are linked by multiplex but organically complete equations; and that even were Einstein's theories proved incorrect or partly incorrect, the fundamental equations are immutable and capable of ultimate elucidation.

Arguing further, however, Dr. Freed claims that as the universe is an integrated unity as discovered by the world of science, so too the world of philosophy may, by using the same concept, integrate 'theism and humanism . . . the body and the mind . . . the material and the spiritual universe'. This, of course, is where the whole fabric of the supposition falls away as elementary logic shows that the two statements are in no wise related. The rest of the letter, being based on this, automatically has no authoritative substance.

Scientific theory, as Dr. Freed himself points out, is subject to experimental verification whilst philosophical speculation is merely a phantasm of the intellect, subsisting *in vacuo*.

The question of poetic insight and the qualities of Justice, Love and Mercy is a particularly thorny one. I myself can justly claim to have written a fair amount of poetry, perhaps some even with insight, and am firmly imbued with the qualities of Justice, Love and Mercy: nevertheless, I have no desire to be 'saved', and feel that this is possibly a wish-desire of a psychological nature in an intellect unintegrated with normal life.

Perhaps it would be wiser to pursue a policy of tolerant agnosticism, whilst considering Man as a complex variable of a cosmic equation.

F. I. Jackson.
M.B., Ch.B., D.P.H.

'Karma,'
Saunders Road,
Sea Point, C.P.
24 March 1951.

South African Railways and Harbours Sick Fund

APPOINTMENT OF PATHOLOGIST: PORT ELIZABETH

Applications are invited from registered pathologists for the position of pathologist, Port Elizabeth, at a salary of £500 per annum (inclusive of cost-of-living allowance) plus the fees and allowances prescribed by the Regulations of the Sick Fund and with the right of private practice.

The salary will be subject to adjustment in accordance with the census of members to be taken on 1 April of each year.

The appointment will be made in terms of the Regulations of the Fund and will be subject to termination on four months' notice being given by either side.

The successful applicant will be required to reside at Port Elizabeth, to take up the appointment on a date to be arranged, and to carry out his duties in accordance with the Regulations of the Fund.

Applications should reach the District Secretary, Cape Midland District Sick Fund Board, 116 Mutual Arcade, Port Elizabeth, not later than 28 May 1951, and should state:—

1. Full name.
2. Qualifications (where and when obtained).
3. Experience (when and where obtained).
4. Date of birth.
5. Country of birth.
6. Married or single.
7. Whether fully bilingual.
8. Whether South African citizen.
9. What Government appointment, if any, is held.

Canvassing by or on behalf of any applicant is liable to disqualify such applicant.

Any further particulars required may be obtained from the District Secretary at the above address, on application.

P. J. Klem
General Secretary
(81)

Johannesburg
April 1951

Wanted

Energetic and experienced general practitioner capable of doing general surgery in partnership practice in large country hospital town with all facilities. One partner proceeding overseas for further study. Either long-term locum, or purchase of share of practice to be arranged. Good opportunity for Jewish doctor. Write stating particulars of experience, marital status, and when able to commence to 'A. G. C.', P.O. Box 643, Cape Town.

Locum Gevra

Om een vennoot van vennootskappraktyk in Wes-Transvaal af te los vir 'n tydperk van 6 weke vanaf 18 Junie 1951 of andersinds vanaf 2 Julie 1951. £2 2s. per dag met vry inwoning. Vervoer toelaag wat gereël kan word. Eerste klas retoer reiskaartjie word uitbetaal. Verdere voorwaardes kan gereël word. Skryf aan 'A. F. Y.', Posbus 643, Kaapstad.

Part-Time Physiotherapist

Applications are invited for the position of part-time Physiotherapist to the City Council Employees' A.T.C. Benefit Society, Johannesburg, at a salary of £30 per month.

For further particulars apply to the Secretary, 508 Africa House, Rissik Street, Johannesburg.

For Sale: Cape Town

Gynaecological table/operation table; adjustable head, trunk and leg supports and stirrups. Can be placed in Fowler or Trendelenburg position. Rubber padded throughout. British made. What offers? Telephone 3-2200 or 2-7260.

Siekefonds van die Suid-Afrikaanse Spoorweë en Hawens

AANSTELLING VAN PATALOOG: DURBAN

Applikasies word van geregistreerde spesialiste ingewag vir die betrekking van Pataloog, Durban, teen 'n salaris van £1,844 per jaar, plus gelde en toelaes wat in die regulasies van die Siekefonds voorgeskryf word, en met die reg om privaat te praktiseer.

Die salaris is onderhewig aan wysiging in ooreenstemming met die sensus van lede wat op 1 April van elke jaar afgeneem moet word.

Die aanstelling geskied kragtens die regulasies van die Fonds en opsegging van dienste is onderworpe aan vier maande kennisgewing deur een van beide partye.

Die suksesvolle applikant moet op Durban woon, op 'n datum wat gereël sal word diens aanvaar, en sy pligte ooreenkomstig die regulasies van die Fonds uitvoer.

Applikasies moet die Distriksekretaris, Distriksiekefondsraad, Martin West-geboue, Smithstraat, Durban, nie later nie dan 25 Mei 1951 bereik, en applikante moet die volgende vermeld:—

1. Volle naam.
2. Kwalifikasies (waar en wanneer verkry).
3. Ondervinding (waar en wanneer verkry en opgedoen).
4. Datum van geboorte.
5. Land van geboorte.
6. Getroud of ongetroud.
7. Of ten volle tweetalig.
8. Of Suid-Afrikaanse burger.
9. Watter staatsbetrekking, indien enige, beklee word.

Werwing deur of ten behoewe van enige applikant stel so 'n applikant bloot aan diskwalifikasie.

Enige verder besonderhede wat verlang word kan op aanvraag van die Distriksekretaris by die bovermelde adres verkry word.

P. J. Klem
Hoofsekretaris
(82)

Johannesburg
21 April 1951

University of Natal

MEN'S RESIDENCE, ORIBI: MEDICAL OFFICER, 1951

Applications are invited from suitably qualified registered medical practitioners residing in Pietermaritzburg for the above-mentioned post for 1951. Full details may be obtained from the Registrar, University of Natal, P.O. Box 375, Pietermaritzburg. Applications close on 30 April 1951.

E.N.T. Practice

An E.N.T. practice can be taken over for a nominal sum. Rooms, receptionist, instruments, etc., are included as well as an introduction to the practitioners supporting the practice. The advertiser is prepared to spend a couple of months with his successor at the rooms. Reply 'A. G. D.', P.O. Box 643, Cape Town.

Vacancy

A vacancy exists for a part-time medical officer for the European employees of the Kendal Colliery Ltd., Kendal. Full particulars obtainable from and applications to be made to the Secretary, Witbank Coalfields Benefit Society, P.O. Box 26, Witbank, Transvaal. Applications close on 28 April 1951.

Rooms Available: Cape Town

City physician wishes to share his rooms, preferably with another specialist. Rooms in centre of city. Write to 'A. G. B.', P.O. Box 643, Cape Town.

Provincial Administration of the Cape of Good Hope

HOSPITALS DEPARTMENT

CARINUS NURSING COLLEGE, CAPE TOWN: LECTURES TO STUDENT NURSES

Applications are awaited from registered medical practitioners to lecture to student nurses at the Carinus Nursing College, Cape Town, in the following subjects for a period of one year as from 1 July 1951:—

Anaesthetics	6 lectures per course	Three courses per annum.
Pediatrics	6 " " "	
Urology	6 " " "	
Gynaecology	6 " " "	
Ear, Nose and Throat	6 " " "	
Ophthalmology	6 " " "	
Dermatology	6 " " "	
Venereal Diseases	6 " " "	
Anatomy	25 " " "	
Physiology	25 " " "	
Medical Nursing	40 " " "	
Surgical Nursing	40 " " "	
Orthopaedics	6 " " "	
Materia Medica	6 " " "	

Lectures to be given between the hours 8.45 a.m. to 12.45 p.m., each lecture to be of one hour's duration. Lecturers will be remunerated at the rate of £1. 1. 0. per lecture and 1/- per examination paper corrected.

Applicants must state in what subjects they are prepared to give lectures and whether such lectures can be given in English or Afrikaans or both.

Further particulars are obtainable from the Principal, Carinus Nursing College, Cape Town.

Applications must be addressed to the Director of Hospital Services, P.O. Box 2060, Provincial Building, Wale Street, Cape Town, and must reach him not later than 11 May 1951.

(Y24 9445)

Provinsiale Administrasie van die Kaap die Goeie Hoop

(HOSPITAALDEPARTEMENT)

CARINUS-VERPLEGINGSKOLLEGE, KAAPSTAD: LESINGS VIR LEERLINGVERPLEEGSTERS

Aansoeke word ingewag van geregistreerde geneeshere om lesings aan leerlingverpleegsters aan die Carinus-verplegingskollege, Kaapstad, te gee in die volgende vakke vir 'n tydperk van een jaar, met ingang van 1 Julie 1951:—

Narkoseleer	6 lesings per kursus	Drie kursusse per jaar.
Kindergeneeskunde	6 " " "	
Urologie	6 " " "	
Ginekologie	6 " " "	
Oor, Neus en Keel	6 " " "	
Oogheelkunde	6 " " "	
Dermatologie	6 " " "	
Geslagsiektes	6 " " "	
Anatomie	25 " " "	
Fisiologie	25 " " "	
Mediese Verpleging	40 " " "	
Heelkundige Verpleging	40 " " "	
Ortopedie	6 " " "	
Artsenykunde	6 " " "	

Lesings moet gegee word tussen die ure 8.45 vm. tot 12.45 nm. Elke lesing moet een uur duur. Lektore sal besoldig word teen £1. 1. 0. per lesing en 1/- vir elke vraestel wat nagesien word.

Applikante moet meld in watter vakke hulle bereid is om lesings te gee, en of die lesings in Engels of Afrikaans, of albei tale, gegee kan word.

Nadere besonderhede is verkrygbaar by die Prinsipale, Carinus-verplegingskollege, Kaapstad.

Aansoeke moet aan die Direkteur van Hospitaaldienste, Posbus 2060, Provinsiale Gebou, Waalstraat, Kaapstad, gerig word, en moet hom nie later as 11 Mei 1951, bereik nie.

(Y24 9446)

South African Railways and Harbours Sick Fund

APPOINTMENT OF EAR, NOSE AND THROAT SPECIALIST: PIETERMARITZBURG

Applications are invited from registered specialists for the position of ear, nose and throat specialist, Pietermaritzburg and Northern Districts, at a salary of £543 per annum, plus the fees and allowances prescribed by the Regulations of the Sick Fund, and with the right of private practice.

The salary will be subject to adjustment in accordance with the census of members to be taken on 1 April of each year.

The appointment will be made in terms of the Regulations of the Fund, and will be subject to termination on four months' notice being given by either side.

The successful applicant will be required to reside at Pietermaritzburg, to take up the appointment with effect from a date to be arranged, and to carry out his duties in accordance with the Regulations of the Fund.

Applications should reach the District Secretary, Natal District Sick Fund Board, Martin West Buildings, Smith Street, Durban, not later than 25 May 1951, and should state the following:—

1. Applicant's full name.
2. Qualifications (where and when obtained).
3. Experience (where and when obtained).
4. Date of birth.
5. Country of birth.
6. Married or single.
7. Whether fully bilingual.
8. Whether South African citizen.
9. What Government appointment, if any, is held.

Canvassing by or on behalf of any applicant is liable to disqualify such applicant.

Any further particulars required may be obtained from the District Secretary at the above address, on application.

P. J. Klem
General Secretary

Johannesburg
21 April 1951

(83)

Public Service Commission

VACANCIES IN THE PUBLIC SERVICE

1. The attention of medical practitioners and physiotherapists registered with the South African Medical and Dental Council, is drawn to an advertisement appearing in the *Government and Provincial Gazettes* of this week, inviting applications for the undermentioned posts:

Post	*Department/ Administration*	*Salary Scale*
Medical Inspector of Schools	Transvaal Provincial Administration	£900 x 40—1,100 x 50—1,200
Assistant Pathologist	Health	£780 x 30—900
Medical Officer	Health	£600 x 30—840 plus privileges of quarters, rations, fuel, light and laundry.
Female Physiotherapist, Grade II	Health	£300 x 20—440

2. In addition to salary a cost-of-living allowance at the following rates is payable for the present:

Salary Group	*Married Officers*	*Unmarried Officers*
Over £200—£300 p.a.	£156 p.a.	£50 p.a.
Over £300—£350 p.a.	£182 p.a.	£50 p.a.
Over £350 per annum	£208 p.a.	£50 p.a.

3. It is emphasized that full and detailed particulars of qualifications and previous experience (including military service) must be furnished but original certificates and testimonials should not be submitted. Application forms (Z.83 and P.S.C.8(a)) are obtainable from the Secretary, Public Service Commission, Pretoria, to whom filled-in forms must be addressed.

4. The closing date for the receipt of applications is 4 May 1951.

(28256)

Vacant District Surgeoncies

Applications for the undermentioned district surgeoncies, accompanied by full particulars as to date and country of birth, qualifications, experience and previous and present appointments of the applicants and the earliest date on which they can assume duty, if appointed, should reach the Secretary for Health, P.O. Box 386, Pretoria, not later than 9 May 1951. Testimonials (copies) may be submitted, but the Minister of Health wishes it to be known that any candidate will be regarded as disqualified who directly or indirectly canvasses for appointment.

The appointments are on a part-time basis and private practice is not precluded.

Applicants should state whether they have a knowledge of both official languages, also whether they are competent to diagnose leprosy and venereal disease and to use the modern intravenous and other thereapeutic technique in the treatment of venereal disease. Applicants should also state whether they have any experience as a medical officer of health or in any similar capacity. If more than one post is applied for, a separate application should be submitted in respect of each.

Place	*Salary per Annum*	*Drug Allowance per Annum*
Cape Province	£	£
Fort Beaufort	200	45
Grahamstown	400	40
Rhodes	350	25
Darling (Malmesbury)	150	15
Touws River	150	15
Fraserburg	200	45
Tsolo	300	10
Transvaal		
Wakkerstroom	400	60
Alldays (Zoutpansberg)	200	20
Villa Nora (Potgietersrust)	350	25
Trichardt (Bethal)	200	25
Brakpan	500	*
Natal		
Melmoth (Entonjaneni)	300	20
Greytown (Umvoti)	400	30
Magut	500	50
Mtunzini	820	25

* Drugs supplied under contract

The salaries cover all ordinary and routine services but travelling allowance of 1s. per mile for all mileage travelled outside a radius of three miles from headquarters, night detention at 15s. and supplementary fees for certain other services will be payable. Also fees for attendance at courts and inquests in accordance with the tariff of the Department of Justice.

Mtunzini

The salary includes £520 per annum (inclusive of transport) as visiting medical officer to the Amatikulu Leper Institution involving at least four visits a week to the Institution.

Forms of application and copy of draft agreement will be furnished on application. (28354)

Assistantship Required

A well-experienced, English-speaking general practitioner; married, T.T.; qualified Edinburgh 1941; bilingual; studied F.R.C.S. unsuccessfully. Practical surgery for the last 3 years. Has held a registrar's post, general, gynaecological and orthopaedic surgery. Excellent testimonials. Returning to South Africa on 31 May 1951. Desires assistantship general practice with a view to partnership, preferably at or near the coast. Capital available. Reply to 'A. F. R.', P.O. Box 643, Cape Town.

Te Koop

Algemene praktyk O.V.S. platteland. Distriksgeneesheerskap. Geen chirurgie. Netto inkomste, £1,900 per jaar. Premium £500, medisyne voorraad £120. Instrumente teen kosprys indien verlang. Huurhuis beskikbaar. Skryf aan 'A. F. S.' Posbus 643, Kaapstad.

Vakante Poste vir Distriksgeneeshere

Aansoeke om ondergenoemde poste van distriksgeneeshere, met vermelding van datum en land van geboorte, kwalifikasies, ondervinding, vorige en teenswoordige betrekkings en die vroegste datum waarop diens aanvaar kan word, indien aangestel, word ingewag deur die Sekretaris van Gesondheid, Posbus 386, Pretoria en moet hom voor of op 9 Mei 1951, bereik. Getuigskrifte (afskrifte) kan gestuur word, maar die Minister van Gesondheid wil dit goed laat verstaan dat 'n kandidaat as gediskwalifiseer beskou sal word as hy regstreeks of onregstreeks steun vir sy benoeming werf.

Die aanstelling is deeltyds en private praktyk word toegelaat.

Applikante moet ook vermeld of hulle albei amptelike tale ken, asook of hulle melaatsheid en veneriese siektes kan diagnoseer, en die moderne binneaarse en ander geneeskundige metodes by die behandeling van veneriese siektes kan toepas.

Applikante moet ook vermeld of hulle ondervinding as mediese gesondheidsbeampte of in 'n soortgelyke hoedanigheid gehad het. As om meer as een pos aansoek gedoen word moet 'n afsonderlike aansoek ten opsigte van elkeen ingedien word.

Plek	*Salaris per jaar*	*Toelae vir Medisyne per Jaar*
Kaap Provinsie	£	£
Fort Beaufort	200	45
Grahamstad	400	40
Rhodes	350	25
Darling (Malmesbury)	150	15
Touws Rivier	150	15
Fraserburg	200	45
Tsolo	300	10
Transvaal		
Wakkerstroom	400	60
Alldays (Zoutpansberg)	200	20
Villa Nora (Potgietersrus)	350	25
Trichardt (Bethal)	200	25
Brakpan	500	*
Natal		
Melmoth (Entonjaneni)	300	20
Greytown (Umvoti)	400	30
Magut	500	50
Mtunzini	820	25

* Medisyne kragtens kontrak verskaf

Die salarisse dek alle gewone en roetine-dienste dog reistoelae teen 1s. per myl vir alle afstande wat buite 'n omtrek van drie myl vanaf die standplaas afgelê word nagverblyf teen 15s. en bykomende vergoeding vir sekere ander dienste word betaal, asook gelde vir bywoning van hofsittings en geregtelike lykskouings ooreenkomstig die skaal van die Departement van Justisie.

Mtunzini

Die salaris sluit £520 per jaar in (insluitende reistoelae) as besoekende Mediese Beampte van die Leprosegestig, Amatikulu wat beteken dat die inrigting minstens vier keer per week besoek moet word.

Aansoekvorms en kopiee van kontrakvorms word op aansoek verstrek. (28354)

Natal Provincial Administration

VACANCY: THEATRE SISTER: WENTWORTH HOSPITAL

Applications are invited from suitably qualified nurses for appointment to the abovementioned vacancy.

Qualifications. Applicants must be registered with the South African Nursing Council as Medical and Surgical Nurses and also as Fever Trained Nurses. Experience in chest surgery and midwifery will be additional recommendations.

The salary scale attaching to the post is £225 × 15—£240 × 20—£320, plus free quarters, rations, fuel, light and laundry, or cash in lieu thereof.

Applications should be addressed to the Matron, Wentworth Hospital, P.O. Jacobs, Durban, to reach her before 5 May 1951.

(AD 6203)

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